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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,699	11/21/2006	Norbert Topf	F-9145	6567
28107 7590 02/01/2008 JORDAN AND HAMBURG LLP 122 EAST 42ND STREET SUITE 4000 NEW YORK, NY 10168			EXAMINER PARSA, JAFAR F	
			ART UNIT 1621	PAPER NUMBER
			MAIL DATE 02/01/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/582,699

Applicant(s)

TOPF ET AL.

Examiner

Jafar Parsa

Art Unit

1621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>1/4/2007 & 6/13/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicant's election with traverse of Group I, claims 1-9 and 11-15 in the reply filed on 10/25/2007 is acknowledged. The traversal is on the ground(s) that apparatus or means could not be used for carrying out another process, nor that the process could not be carried out using an alternative apparatus or means" does not imply. This is not found persuasive because the inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because under Rule 13.2 they lack the same or corresponding special technical features since the prior art, US 2002/0087037 A1 also teaches a method and apparatus, which contains the following units: dryer, electrolysis, gasification/combustion, purification and methanol synthesis unit for the same purpose means producing liquid energy from carbon containing carrier. Therefore, there is no special technical feature that is unique with respect to either of Group I or Group II that links the aforementioned groups together.

The requirement is still deemed proper and is therefore made FINAL.

Specification

The following headings are required for a utility application under 37 CFR 1.77(b)

- a) title of the invention,
- b) cross-reference to related application,
- c) background of the invention,
- d) summary of the invention,
- g) **brief description of drawings**, and
- h) detailed description of the invention.

Appropriate corrections are required.

Claim Rejections - 35 USC § 112

Claims 9, 12 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors. For instance, in claims 12 and 13 line 3, claim 9, line 4, the word "cooling " is an adjective and should be followed by a noun. The same correction is required for each claim.

Claim Rejections - 35 USC § 112

The term "*liquid energy carrier*" in claims 1-9, 11-15 renders the claim indefinite. The term "*liquid energy carrier*" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 112

The term "*synthesis apparatus*" in claims 1-9, 11-15 renders the claim indefinite.

For instance, it is not clear when feeding the residual gas or synthesis gas to *synthesis apparatus* is this means that the residual gas is returned to synthesis gas generation unit? or methanol synthesis unit (liquid energy)? or gasification unit? or combustion unit? Clarification is required for each claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-9 and 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko et al (US 2002/0087037 A1) in view of Shah et al (US 2003/0083390 A1) and further in view of Olsen et al (Unit Processes and Principles of Chemical Engineering).

Applicants' claimed invention is directed to a process for producing a liquid energy carrier comprising producing a synthesis gas by gasifying a solid carbon carrier in a plant which comprises at least a drying apparatus for drying the carbon carrier, a gasification apparatus for gasifying the carbon carrier and for producing the synthesis gas, a synthesis apparatus for the synthesis of the liquid energy carrier from the synthesis gas and an apparatus for the electrolysis of water for producing oxygen as gasification agent for the gasification process in the gasification apparatus and

hydrogen for the synthesis process in the synthesis apparatus, and feeding at least part of off-vapor from the drying apparatus and at least part of residual gas obtained in the synthesis to the gasification process in the gasification apparatus.

Kaneko teaches a process for producing methanol from biomass material, which method is capable of making effective use of produced carbon monoxide without deteriorating efficiency of methanol production. The process also provides an apparatus for producing methanol. In the process for producing methanol making use of biomass material including a dryer for drying the biomass material, gasifying biomass to produce a gas and producing methanol from the produced gas, water is electrolyzed by means of a water electrolysis unit operated by electric power generated from a sunlight power-generation unit or a wind power-generation unit, and hydrogen gas generated through electrolysis of the water is supplied to the raw material gas such that the amount of hydrogen is adjusted to at least twice the amount of carbon monoxide contained in the produced gas, to thereby produce methanol in a methanol synthesis column. See abstract and Figure 1.

Kaneko teaches that oxygen gas generated through electrolysis of water by means of the water electrolysis means is supplied, as a gasification agent, to the biomass gasification means. See paragraph 0022. Kaneko discloses that the biomass is dried in the dryer 11, fed into the hopper 12, and supplied from the hopper 12 into the pulverizer 13, where the biomass 1 is pulverized. The pulverized biomass is supplied into the gasification furnace 14. Oxygen gas 4 is supplied from the oxygen gas tank 25 into the gasification furnace 14, to thereby cause partial combustion. Furthermore, water

3 is supplied from the water supplier 22 to the heat exchanger 14a for heating, to thereby generate high-temperature steam (400-500.degree. C.). The steam is supplied into the gasification furnace 14. See paragraph 0040.

Kaneko teaches that the produced gas 2 generated in the aforementioned gasification furnace 14 is supplied into the dust collecting unit 15, to thereby remove ash 6 and like matter. Subsequently, the gas is supplied into the scrubber 16, and cooled and washed by being sprayed with washing water 7. Then, the gas is transferred from the scrubber 16. See paragraph 0042. Kaneko discloses that hydrogen gas 5 deficient in amount with respect to carbon monoxide contained in the produced gas 2 formed from the biomass 1 is supplemented, and then methanol 8 is produced. See paragraph 0046. Since oxygen gas 4 formed through electrolysis of water 3 so as to obtain hydrogen gas 5 is employed for partial combustion in the gasification furnace 14, water 3 can be utilized effectively, leading to effective utilization of resources and a reduction in production costs. See paragraph 0049.

The difference between Kaneko and the claimed invention is that the instant claims require that feeding at least part of off-vapor and residual gas obtained in the synthesis to the gasification process. However, Shah in a process for producing liquid energy (hydrocarbons) from carbon containing carrier teaches that the residual gas comprised of water vapor, carbon dioxide, methane, nitrogen, unreacted syngas and vapor hydrocarbon product is recycled back to the gasification unit for effective of utilization of resources and reduction in production cost. See paragraph 007.

It would therefore have been obvious to one of ordinary skill in the art at the time the invention was made to recycle back the off-vapor and residual gas to the gasification unit for effective of utilization of resources and reduction in production cost.

The dependent claims further differ in disclosing collecting the waste heat from the gasification apparatus/and or the synthesis apparatus and/or the combustion apparatus and passes it to the drying apparatus. However, Olsen discloses that it was well known in the art at the time of the invention that knowing where in the process heat is produced and where said produced heat can be used to improve process efficiency and minimize waste therefore whether or not such heat is wasted or recovered it is matter of cost of recovery. See Olesen pages 1-3. It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to utilize the heat recovered from gasification apparatus/and or the synthesis apparatus and/or the combustion apparatus and passes it to the drying apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jafar Parsa whose telephone number is (571)272-0643. The examiner can normally be reached on 9 a.m.-5:30 p.m. (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bonnie Eyler can be reached on 571-272-0871. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JP
January 21, 2008

Jafar Parsa
Primary Examiner
Art Unit 1621



J. PARSA
PRIMARY EXAMINER